## Matchline Exercise

1.  Open the following MicroStation file:

    **pw:\MoDOT\Documents\District CADD\Design\Cole\J5P0100\data\Match_Pattern_Shape.dgn.**

2.  In the project **J5P0100.prj**, copy the working alignment **Route50** to **50-Match**, and select this working alignment.

3.  In the **50-Match** working alignment definition, under the **Pattern** and **Shape Section**, change the **Design File** the following: **Match_Pattern_Shape.dgn.**

    Close the working alignment definition box.

4.  Create the matchline locations as follows:

    Use the copy parallel tool to copy the **Ramp1 shoulder 12' right**.

    Use the copy parallel tool to copy the **Ramp1 shoulder 20' right**.

    Use the copy parallel tool to copy the **Route50 shoulder 24' left**.

    **Intersect** the line that is 12' offset from the ramp shoulder and the line that is offset 24' from the Route50 shoulder.

    **Trim** the line that is 20' offset from the ramp shoulder to the line that is offset 24' from the Route50 shoulder.

    Open D&C Manager and select the item in **Design Standards\Roadway\Matchline**

    Draw a line from the bottom gore point to the 2 intersected lines and continue to the end of the back of ditch for ramp1 as shown below. You can at this point delete the construction lines used to draw the matchline. **SAVE** MicroStation File**.**
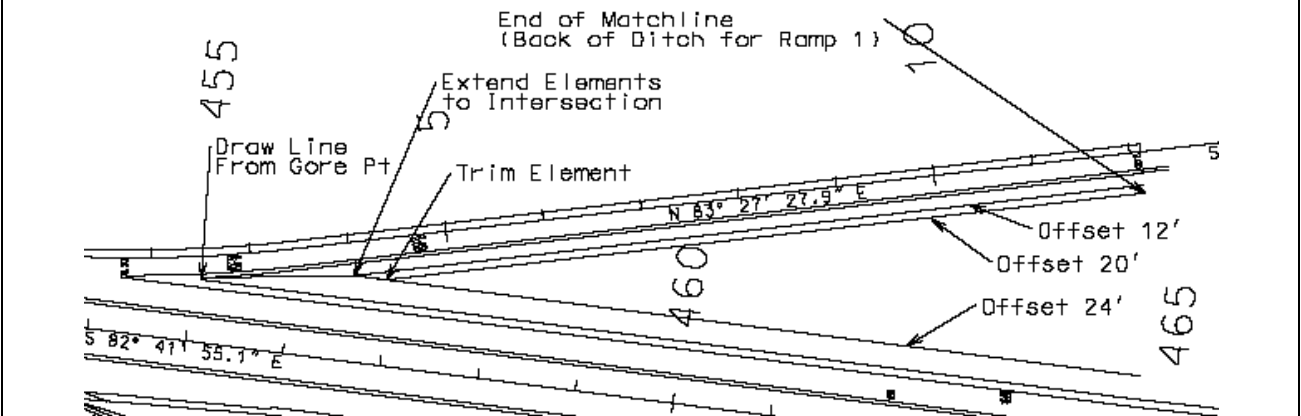
5.  From Project Manager select Draw Pattern.  Copy the **MoDOT** run to **50-Match**.

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6.  Create pattern lines for the alignment.

    Job:            **100**
    Chain:          **Route50**
            Beginning
            Offset LT:      **200**
            Station:        **455+00**
            Offset RT:      **200**
    Ending
            Offset LT:      **200**
            Station:        **465+00**
            Offset RT:      **200**

    **Even            100**

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7.  From the Project Manager, copy the working alignment **Ramp1** to **R1-Match**, and select this working alignment.

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8.  In the **R1-Match** working alignment change the following:

**Pattern Section**

Design File:        Match_Pattern_Shape.dgn.
Color:              4 (Green)

   **Placement Color**

   Level:           GeoPak-Pattern line 1
   Color:           4 (Green)
   Style:           0
   Weight:          1

**Shape Section**

Design File:        Match_Pattern_Shape.dgn.
Color:              4 (Green)

Close the working alignment definition box.

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9.  From Project Manager select **Draw Pattern**.  Copy the **MoDOT** run to **R1-Match.**

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10. Create **pattern lines** for the alignment.

    Job:            **100**
    Chain:        **Ramp1**
        Beginning
        Offset LT:    **100**
        Station:      **3+00**
        Offset RT:    **100**
    Ending
        Offset LT:    **100**
        Station:      **12+00**
        Offset RT:    **100**

    **Even**        **100**

11. Create pattern lines at stations **4+02.11** and **4+34.58** for the alignment **Ramp1**. Use the same offsets as specified previously.

12. Open the MicroStation file **Ramp1_XS_Matchline.dgn.**

13. From Project Manager select **Existing Ground Cross Sections**. Copy the **MoDOT** run to **R1-Match**.

14. Verify the settings on the **XS Cells** and **Surfaces** tabs.

15. Cut the existing ground cross sections. Once the sections are created, lock down all elements.

16. In the **R1-Match** working alignment, under the Cross Section View section, change the **XS DGN** File to **ramp1_xs_matchline.dgn**. Close the working alignment definition box.

17. Select the **Proposed Cross-Sections** Dialog. Copy the **MoDOT** run to **R1-Match**.

18. Add the following Shape Clusters.

    shape cluster baseline  = **RAMP1**
    shape cluster profile   = **RAMP1PR**
    shape cluster tie        = **0.000**

    Select the **Undivided New Construction** typical and apply to the whole chain. When finished, the side slope conditions should look like the dialog to the right. ➔ ➔
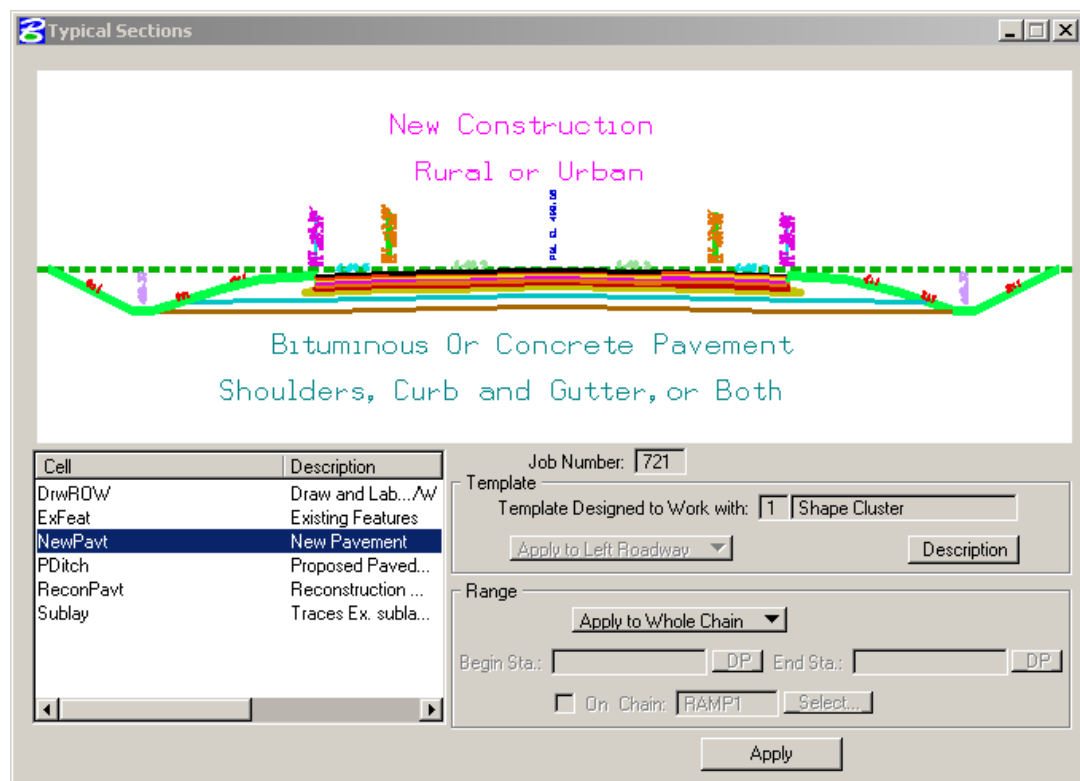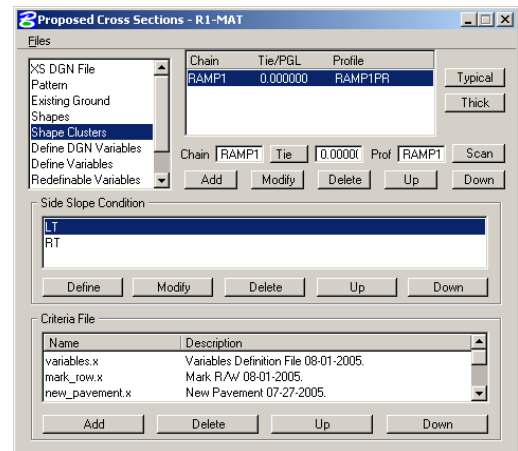




    Close the run and save changes.

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19. Open **Proposed Cross Section** run **R1-Match** and set the **Define Variables** as follow:

"PROPOSED PLAN DGN"           **Rte50_Plan.dgn**
"CROSS-SECTION DGN"           **Ramp1_XS_Matchline.dgn**
"GEOPAK LINES DGN"            **Match_Pattern_Shape.dgn**
"XS SCALE"           **10**

Leave the remaining variables set to the defaults.

20. In the **Redefinable Variables** set the following values for the given variables:

   _d_StandardDitchDepth_Right = 2

21. Process the Cross Section Run

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intentionally left blank

22. Use the Profile Grade report to create a chain and profile at the cross section point **ODITRT**.

Name the chain and profile **MATCHR**

23. Open **COGO Navigator** and make sure the chain and profile were created
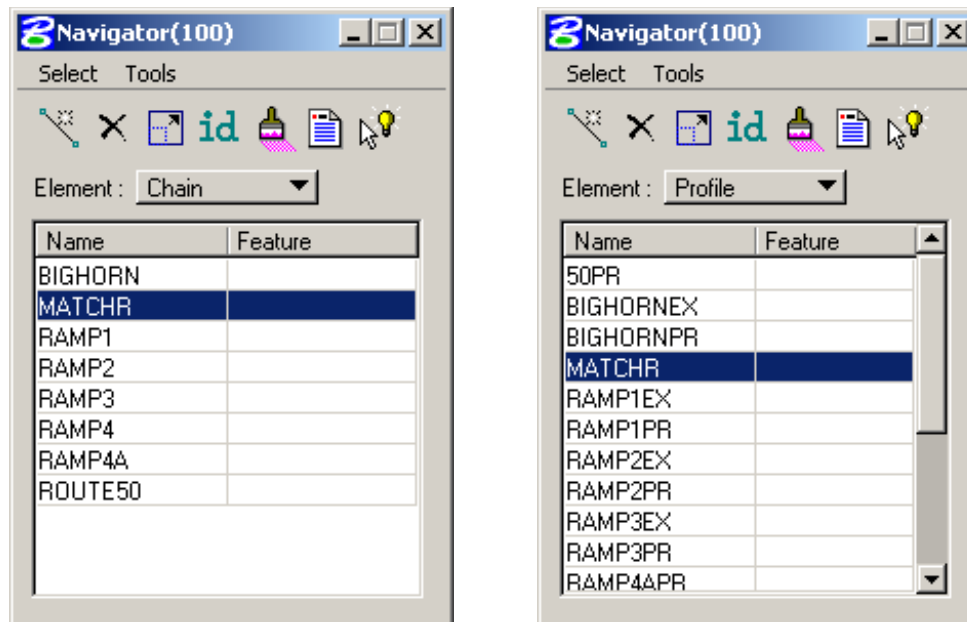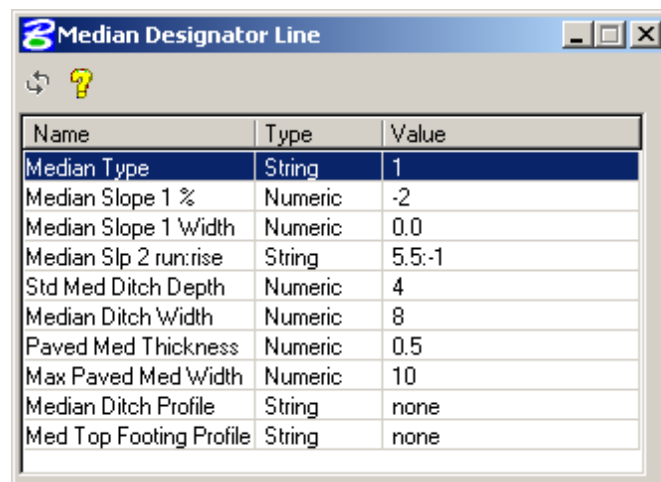


Close the Profile Grade Report Dialog and COGO Navigator

24. Select the **50-Match** Working Alignment.

25. Open the MicroStation file: **Match_pattern_shape.dgn**

Add a **Median Designator Line** with the following AdHoc settings in the median area between the median edges of shoulder.

26. Open the MicroStation file **rte50_xs_matchline.dgn.**

27. From Project Manager select **Existing Ground Cross Sections**.  Copy the **MoDOT** run to **50-Match.**

28. Verify the settings on the XS Cells and Surfaces tabs.

29. Cut the existing ground cross sections.

30. In the **50-Match** working alignment, under the **Cross Section View** section, change the **XS DGN** File to **rte50_xs_matchline.dgn**.  Close the working alignment definition box.
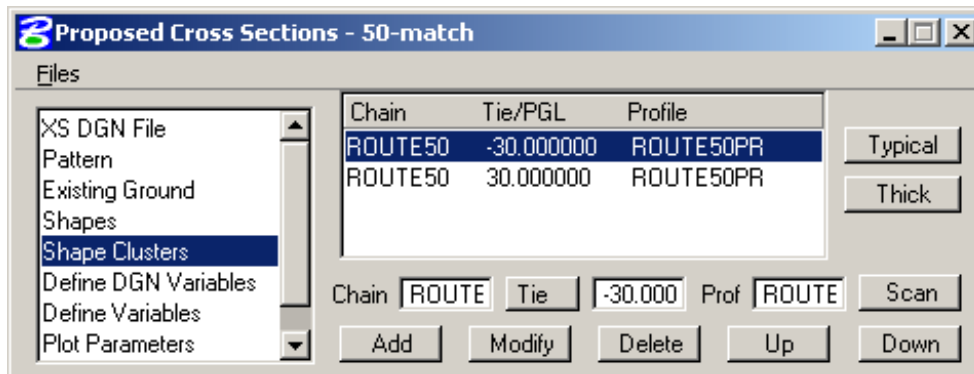
31. Select the **Proposed Cross-Sections** Dialog.  Copy the **MoDOT** run to **50-Match**.

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intentionally
left blank

32. Add the following Shape Clusters as shown below.

shape cluster baseline  = **ROUTE50**
shape cluster profile   = **ROUTE50PR**
shape cluster tie        = **-30.000**

shape cluster baseline  = **ROUTE50**
shape cluster profile   = **ROUTE50PR**
shape cluster tie        = **30.000**

First select the **– 30 cluster** and apply the NewPavt typical, then select the **+30 cluster** and apply the same typical.
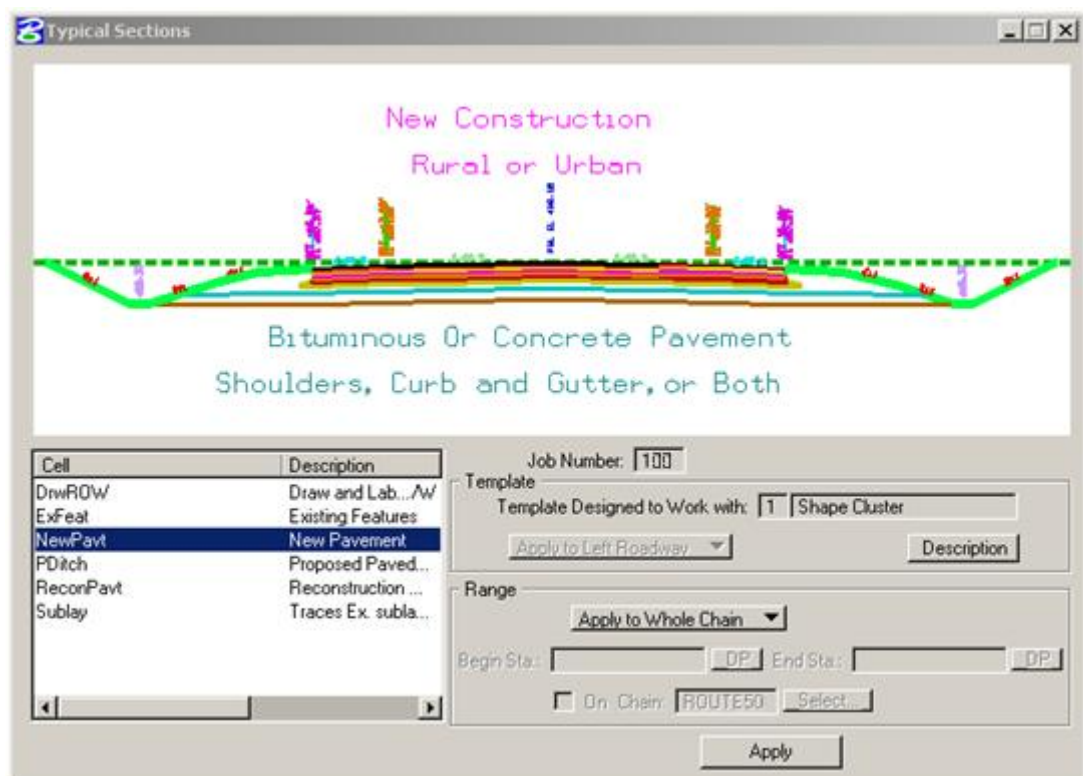
33. Select the Proposed Cross Section run 50-match again and set the **Define Variables** with the values given below.

| | |
|---|---|
| "PROPOSED PLAN DGN" | **rte50_plan.dgn** |
| "CROSS-SECTION DGN" | **rte50_xs_matchline.dgn** |
| "GEOPAK LINES DGN" | **match_pattern_shape.dgn** |
| "LEFT MATCH LINE PROFILES" | **MatchR** |
| "MATCHLINE CHAIN NAMES" | **MatchR** |

Leave the remaining variables set to the defaults.

34. No **Redefinable Variables** will be set up for this run.  We are using the AdHocs in the plan view geometry to expedite things. So, we will leave all **Redefinable Variables** as default.

35. Process the cross section run and review your cross sections.